CIRCULARLY POLARIZED LIGHT SEPARATING LAYER, OPTICAL ELEMENT, POLARIZATION LIGHT SOURCE DEVICE AND LIQUID CRYSTAL DISPLAY DEVICE

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Abstract of **JP10054909**

PROBLEM TO BE SOLVED: To obtain a circularly polarized light separating layer which is small in the color change of exit light by a visual angle change and makes the entire region of a visible light region as a reflection wavelength region by constituting cholesteric liquid crystal layers varying in the reflection wavelength regions of a laminate having a combination of the liquid crystal layers having the central wavelengths of reflected light respectively specific ranges. SOLUTION: This circularly polarized light separating layer 1 consists of the laminate having the cholesteric liquid crystal layers 11, 12 varying in the reflection wavelength regions in the combination of the layers having the central wavelength of the reflected light in ranges of 400 to <550nm and >=550 to 700nm. Namely, the laminate is formed by using two layers of the cholesteric liquid crystal layers 11, 12. The cholesteric liquid crystal layers 11, 12 are supported by one or >=2 layers of supporting base materials 13 to 15 according to strength and operability. The cholesteric liquid crystal layers which separate natural light to right and left circularly polarized light rays as transmitted light and reflected light by Grandjean orientation are used. A more specific example thereof includes films of sheets having layers of liquid crystal polymers exhibiting a cholesteric phase.